

Description of Additional Supplementary Files

Supplementary Data 1. Full tables of phenotypic analyses for seven clusters (C1-C7) of sex-stratified subsequences from AD patients. One table shows the proportions of patients diagnosed with a specific phenotype in each of the seven clusters (C1-C7). Another table presents results from nine pairwise comparisons between selected cluster pairs (C2 & C5, C2 & C6, C2 & C7, C3 & C5, C3 & C6, C3 & C7, C4 & C5, C4 & C6, and C4 & C7). For each comparison, both unadjusted and age-adjusted chi-square test results are reported.

Supplementary Data 2. Full tables of phenotypic analyses for five sex-specific sub-phenotypes (S1-S5). One table shows the proportions of patients diagnosed with a specific phenotype in five identified sex-specific sub-phenotypes. Five additional tables present the results of pairwise chi-square tests among the sub-phenotypes, including mean p-values (with a significance threshold of $p < 0.05$) and pooled odds ratios. Another table reports the average model coefficients from regression models trained on combinations of female-dominant and male-dominant sub-phenotypes (S1 & S3, S1 & S4, S1 & S5, S2 & S3, S2 & S4, and S2 & S5). Three further tables provide survival analysis data on time to AD onset associated with the three most prevalent comorbid phenotypes: essential hypertension, hyperlipidemia, and hypertension.